IBM BladeCenter H Chassis delivers high performance, high reliability, and flexibility to demanding IT environments

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At a glance

BladeCenter® H Chassis features:

- New high-efficiency 2980-watt power supplies (Model 8852-4Tx only).
- Two hot-swap blowers standard.
- One Advanced Management Module. A second module is available as an option.
- The ability to integrate storage and Ethernet networking into the chassis.
- Support for current IBM® blade servers, which helps provide investment protection.
- A serial port breakout connector to give direct serial connection to installed blades (for those blades with the functionality).
- Two USB inputs, a light path diagnostic panel, and a blank bezel.

The 8852-4Tx model comes with a blank bezel where a Multi-Burner option may be installed.

For ordering, contact your IBM representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: YE001).

Overview

IBM BladeCenter H Chassis -- A refreshed system for today's business needs

- The rack-optimized, 9 U modular design enclosure holds up to 14 blade servers.
- The chassis introduces:
  - A new high-efficiency 2980-watt power supply module.
  - New hot-swap, redundant blowers and supplemental fans.
  - A high-availability chassis with redundant features that supports all current IBM blades.
  - Support for a SATA UltraSlim Enhanced Multi-Burner Drive option.
  - An Advanced Management Module (aMM) that gives you control over the solutions at the chassis level, simplifying installation and management.
  - Support for up to four traditional fabrics using networking switches, storage switches, or pass-though devices. The chassis also supports up to four new high-speed fabrics for support of protocols like 4X InfiniBand or 10 Gb Ethernet. It offers light path diagnostics and front USB inputs.
  - IBM Director and Remote Deployment Manager™, which makes it easy to install and manage.

IBM services and support

- ServerProven® compatibility testing and Web support
- Three-year, Customer Replaceable Unit (CRU) or on-site labor[1], limited warranty[2]; optional warranty service upgrades

[1] IBM sends a technician after attempting to diagnose and resolve the problem remotely.

[2] For information on the IBM Statement of Limited Warranty, visit

http://www.ibm.com/servers/support/machine_warranties/

Alternatively, this information is also available by contacting your IBM representative or reseller. Copies are available upon request.

Key prerequisites

- Supported blade servers -- HX5, HS22, HS22V, HS12, HC10, HS20, HS21, HS21 XM, LS20, LS21, LS41, JS12, JS20, JS21, JS22, QS21, QS22, LS22, LS42, JS23, and JS43
- 200 to 240 V ac power source
- Monitor, USB keyboard, and USB mouse
- Ethernet switch module
- Rack

Planned availability date

August 23, 2010

Description

Related options

- IBM BladeCenter H 2980W AC Power Modules w/Fan Pack (68Y6601)
- IBM BladeCenter H Enhanced Cooling Modules (68Y6650)

Standard IBM BladeCenter H Chassis configuration

		Modules			
Model	Power supply	Blower	Management	DVD drive	HDD drive
8852-4Tx	2	2	1	None	None

Product positioning

In just 9 U of rack space, the IBM BladeCenter H Chassis can contain up to 14 blade servers, 10 switch modules, and four power supplies to help provide the necessary I/O network switching, power, cooling, and control panel information to support the individual servers.

The blade servers supported by this new BladeCenter Chassis are:

- BladeCenter HC10
- BladeCenter HS20
- BladeCenter HS21
- BladeCenter HS21 XM
- BladeCenter HS22V
- BladeCenter HX5
- BladeCenter LS20
- BladeCenter LS21
- BladeCenter LS41
- BladeCenter JS12
- BladeCenter JS20
- BladeCenter JS21
- BladeCenter JS22
- BladeCenter QS21
- BladeCenter QS22
- BladeCenter HS12
- BladeCenter HS22
- BladeCenter LS22
- BladeCenter LS42
- BladeCenter JS23
- BladeCenter JS43

Product number

Single Entity Offerings (SEOs)

Description	SEO number
IBM BladeCenter H Chassis	88524TU

Options

Description	SEO number
IBM BladeCenter H 2980W AC Power Modules w/Fan Pack	68Y6601
IBM BladeCenter H Enhanced Cooling Modules	68Y6650

The following are newly announced features on the specified models of the IBM BladeCenter 8852 machine type:

Description	MT	Model	Feature
BladeCenter 2980W Power Supplies 1&2	8852	HC1	2142
BladeCenter H Base	8852	HC1	5679
System Documentation and Software-US English	8852	HC1	9716

The following features are already announced for the 8852 machine type:

Description	MT	Model	Feature
BladeCenter 2980W Power Supplies 3&4	8852	HC1	
Code GBM	8852	HC1	2144

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld® ID and password are required (use IBM ID).

https://www.ibm.com/partnerworld/mem/sla.jsp?num=110-015

Publications

An installation and user's guide, and safety and warranty publications are shipped with each IBM BladeCenter H Chassis.

The following publications are available immediately. To order, contact your IBM representative.

Title	Order number
BladeCenter Solutions	GM13-0173
System x Family Brochure	GM13-0128

The IBM Systems Information Center provides you with a single information center where you can access product documentation for IBM systems hardware, operating systems, and server software. Through a consistent framework, you can efficiently find information and personalize your access. The IBM Systems Information Center is at

http://publib14.boulder.ibm.com/infocenter/systems

IBM Publications Center Portal

http://www.ibm.com/shop/publications/order

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided, as well as payment options via credit card. A large

number of publications are available online in various file formats, which can currently be downloaded free of charge.

The *IBM BladeCenter H Chassis Installation and User's Guide* and *Hardware Maintenance Manual,* in U.S. English versions, are available from

http://www.ibm.com/support

Displayable softcopy publications

Publications are offered in displayable softcopy form.

These displayable manuals can be used with the BookManager® READ licensed programs in any of the supported environments. Terms and conditions for use of the machine-readable files are shipped with the files.

Services

Global Technology Services

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an On Demand Business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

For details on available services, contact your IBM representative or visit

http://www.ibm.com/services/

For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or visit

http://www.ibm.com/services/continuity

For details on education offerings related to specific products, visit

http://www.ibm.com/services/learning/index.html

Select your country, and then select the product as the category.

System x and BladeCenter support services

Recommended core technical support

When you buy IBM System x® technology, include the support services you need -- to help keep both your hardware and software working for you, day after day, at peak performance. It's your first step toward helping to protect your investment and sustain high levels of system availability. We offer service-level and response-time options to fit your business needs. And we'll help you get started with a core support package that includes:

- **Continuous system monitoring**

  Electronic monitoring that helps speed up problem-solving with automated, early detection of potential problems and system errors.

- **Hardware maintenance**

  World-class remote and on-site hardware problem determination and repair services.

- **Software technical support**

Access to help line calls for fast, accurate answers to your questions during installation and throughout ongoing operations.

For more information, visit

http://www.ibm.com/servers/eserver/xseries/services.html

Technical information

Specified operating environment

Physical specifications

IBM BladeCenter H Chassis

	8852-4Tx
Blade server bays (type) -	High-availability
Blades server standard -	0
Blades server maximum -	14
PCI slots -	0
I/O module bays -	10
Management modules -	2
Standard -	1
Additional -	1
UltraSlim Enhanced Multi-burner	0
USB port - Front	2
Diskette drive -	0
Power supply modules -	2980 W
Number standard -	2 with fan packs
Maximum -	4 with fan packs
Hot-swap -	Yes
Redundant power -	Standard
Auto restart -	Yes
Cooling -	2 blowers
Redundant -	Yes
Hot-swap -	Yes

Electrical -- BladeCenter H Chassis

- 200-240 (nominal) V ac; 50 Hz or 60 Hz; 37 A (X2)/48 A maximum
- Input kilovolt-amperes (kVA) (approximately):
  - Minimum configuration: 0.3 kVA
  - Maximum configuration: 9.6 kVA
- Btu output:
  - Minimum configuration - 1013 Btu/hr (300 VA)
  - Maximum configuration - 32409 Btu/hr (9600 VA)
- Acoustical: declared sound power level: 7.5 bels

Equipment approvals and safety

- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 4, Class A
- UL/IEC 60950-1[3]
- CAN C22.2 No. 60950-1-03
- NOM-019[3]

[3] These servers are certified by the respective UL and NOM agencies.

Operating environment

- Temperature:
  - 10.0 to 35.0 degrees C (50 to 95 degrees F) at 0 to 914 m (0 to 3,000 ft)
  - 10.0 to 32.0 degrees C (50 to 90 degrees F) at 914 to 2,133 m (3,000 to 7,000 ft)
- Relative humidity: 8% to 80%
- Maximum altitude: 2,133 m (7,000 ft)

Compatibility

The BladeCenter H 8852-4Tx supports:

- HC10 blades
- HS12 blades
- HS20 blades
- HS21 blades
- HS21 XM blades
- HS22 blades
- HS22V blades
- HX5 blades
- JS12 blades
- JS20 blades
- JS21 blades
- JS22 blades
- LS20 blades
- LS21 blades
- LS22 blades
- QS21 blades
- QS22 blades
- LS41 blades
- LS42 blades
- JS23 blades
- JS43 blades

For detailed information about IBM and non-IBM devices, adapters, software, and network operating systems supported with BladeCenter servers, visit

http://www.ibm.com/us/compat

Contact your IBM representative or refer to the *IBM Sales Manual* for information on the compatibility of hardware and software for BladeCenter servers. The *Sales Manual* is updated periodically as new features and options are announced that support these servers.

Limitations

This BladeCenter H chassis requires 200 to 240 V ac power.

User group requirements

This announcement satisfies or partially satisfies requirements from one or more of the worldwide user group communities. Groups include COMMON, COMMON Europe, Guide Share Europe (GSE), InterAction (Australia/New Zealand), Japan Guide Share (JGS), and SHARE Inc.

Planning information

Customer responsibilities

IBM BladeCenter H Chassis

This product is designated as customer setup. Customer setup instructions are shipped with the product.

Configuration information

IBM BladeCenter H Chassis configuration

A control panel located on the right side of the unit contains the following status LEDs:

- Power good
- Chassis location
- Over temperature
- Information
- General fault

Two USB ports are located at the bottom right of the control panel, and a blank bezel insert for installation of a DVD drive. An optional USB-attached 1.44 MB diskette drive is available.

Four power modules are front loading for serviceability.

The rear housing contains:

- Two hot-swap, redundant blower assemblies in the center, mounted one on top of the other
- Ten I/O module bays
- One standard management module for KVM/Management and one additional management module bay

Rack installations

The IBM BladeCenter H Chassis 9 U rack-drawer enclosure is designed to be installed in a 19-inch rack cabinet designed for 28-inch deep devices, such as the NetBAY42 ER, IBM S2 42U SR, IBM S2 25U SR, or NetBAY11.

If you choose not to use an IBM rack:

- The rack must meet EIA-310-D standards for mounting flanges and hole locations.
- The front to rear distance of the mounting flanges must be between 698.5 mm and 762 mm (27.5 and 30 inches).
- The thickness of the mounting flanges must be between 1.9 mm and 3 mm.
- The mounting flanges must have either 7.1-mm (.28-in) diameter holes or 9.6-mm (.38-in) square holes on the standard EIA hole spacing.
- The rack must have a minimum depth of 70 mm (2.76 in) between the front mounting flange and inside of the front door for appropriate cooling.
- The rack must have a minimum depth of 157 mm (6.2 in) between the rear mounting flange and inside of the rear door to install the server and make space for cable management.
- The minimum side-to-side clearance in the rack between the front and rear mounting flanges must be 467 mm (18.2 in) to accommodate the width of the server and the slide mounting brackets.
- The minimum side-to-side clearance in the rack between each door and the mounting flanges must be 484 mm (19.1 in) to accommodate the slide mounting brackets.

- The rack must not prevent the flow of cool air into the front of the rack and hot air out of the rear of the rack (front and rear doors, if present, must be perforated).
- It is recommended that any side and top panels be used to try and prevent any unnecessary recirculation within the rack. In addition, it is also strongly recommended that any adjoining racks be sealed between them, also to prevent recirculation. Any openings between, above, or below the rack equipment can cause significant increase in inlet temperature (and hence increase fan and blower speeds undesirably) from this recirculation, so it should be avoided if at all possible.
- All empty EIA space in the rack must be closed off with filler panels to prevent the recirculation of air within the rack.
- The weight-handling capacity of the rack must be able to support the maximum rack configuration, including all servers, external cables, and PDUs.
- The rack must provide proper stabilization so that the rack does not become unstable when servers are pulled out for service.

Power considerations

IBM BladeCenter H Chassis 4Tx model comes with one pair of 2980 W power supplies. These power modules support blade server bays 1 through 7 with power redundancy.

Cable orders

Each IBM BladeCenter H Chassis contains one or two management modules with Ethernet connections. The RJ-45 connectors provide a 10/100 Base-T interface (at either half or full duplex) for connecting twisted-pair cable to an Ethernet network. Cabling is not included with the BladeCenter. To connect the management module(s) to a repeater or switch, use an unshielded twisted pair (UTP) cable with RJ-45 connectors at both ends. For 100 Mbps operation, Category 5 cabling must be used. For 10 Mbps operation, Category 3, or better, cabling must be used.

Each BladeCenter H Chassis can contain several switch modules which have cabling requirements of their own, none of which is included with the BladeCenter.

Installability

The IBM BladeCenter H Chassis requires approximately 30 minutes for installation. Installation includes unpacking, setting up, and powering on the system. Additional time is required to install an operating system, additional options, or features.

Packaging

IBM BladeCenter H Chassis

Product	Ship group	Boxes
BladeCenter	System Unit Carton	1
	Contents:	
	BladeCenter Unit	1
	Publications/CD Package	1
	Rack kit:	1
	Rails	
BladeCenter	Publications/CD Package	1
	Contents:	
	Installation Guide	
	Safety, Contents, and About Your Documentation Flyers	
	ServerGuide™ Coupon	
	Documentation CD-ROM	
	Installation Template	

Related options

BladeCenter 2,980-Watt Power Supply Module pair

- One power supply module pair 2980 W (two power supplies) for Model 4Tx
- Redundant Management Module (one management module)
- Serial port breakout cable (one serial port breakout cable)
- Power cords:
  - Triple IEC 320 C20 power cord
  - Dual NEMA L6-30P power cord
  - IEC 309 32A / IEC 320 C20 power cord
  - Korean power cord
  - AUSTRALIA/NEW ZEALAND power cord

SATA DVD Read/Write Drive Option

- Installs directly into the BC H chassis when bezel removed
- Offers full DVD CD-RW / DVD-ROM capability

Supplies

For end users

IBM BladeCenter H Chassis and options can be purchased through dealers around the world.

Security, auditability, and control

This product uses the security and auditability features of host hardware, host software, and application software.

Limitations

The IBM BladeCenter H Chassis has no security intrusion detection; therefore, it should be installed in a rack environment that provides security through lockable doors or other security measures. It is a customer's responsibility to ensure that the chassis is secure.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

IBM Electronic Services

IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a Web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM

on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, visit

http://www.ibm.com/support/electronic

Terms and conditions

IBM Global Financing

Yes

To obtain copies of the IBM Statement of Limited Warranty, contact your reseller or IBM.

In the United States, call 800-IBM-SERV (426-7378), or write to:

Warranty Information
P.O. Box 12195
Research Triangle Park, NC 27709
Attn: Dept JDJA/B203

Warranty period

- Three years
- Optional features - One year

Optional IBM features initially installed in an IBM machine carry the same warranty period as the machine. If installed after the initial machine installation, they carry the balance of the machine warranty or the optional feature warranty, whichever is greater.

The following have been designated as consumables or supply items and are, therefore, not covered by this warranty:

- None

Warranty service

If required, IBM provides repair or exchange service, depending on the type of warranty service specified below for the machine. IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. Service levels are response-time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country- and location-specific information.

The type of service is Customer Replaceable Unit (for example, keyboard, mouse, speaker, memory, or hard disk drive) Service and On-site Service.

Customer Replaceable Unit (CRU) Service

IBM provides a replacement CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM at any time on your request. A CRU is designated as being either a Tier 1 (mandatory) or a Tier 2 (optional) CRU. Installation of Tier 1 CRUs, as specified in this announcement, is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation. You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service specified below, On-site Service.

Based upon availability, a CRU will be shipped for next business day (NBD) delivery. IBM specifies in the materials shipped with a replacement CRU whether a defective CRU must be returned to IBM. When return is required, return instructions and a container are shipped with the replacement CRU, and you may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

The following parts have been designated as Tier 1 CRUs:

- Battery
- Blank filler
- Cable-management arm
- Hard disk drive
- Hot-swap fan
- Hot-swap power supply
- Lift handle kit
- Memory DIMM
- Memory expansion card
- Optical drive
- PCI adapter
- PCI divider
- Power cord
- Service label
- Service processor
- System label
- Top cover
- Voltage regulator module

On-site Service and CRU

This provides On-site Repair, 9 hours per day, Monday through Friday excluding holidays, NBD response. IBM or your reseller will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose. On-site Service is not available in all countries, and some countries have kilometer or mileage limitations from an IBM service center. In those locations where On-site Service is not available, the normal in-country service delivery is used.

Call IBM at 1-800-IBM-SERV (426-7378) to assist with problem isolation for hardware to determine if warranty service is required. Telephone support may be subject to additional charges, even during the limited warranty period.

Calls must be received by 5:00 p.m. local time in order to qualify for NBD service.

International Warranty Service

International Warranty Service (IWS) is available in selected countries or regions.

The warranty service type and the service level provided in the servicing country may be different from that provided in the country in which the machine was purchased.

Under IWS, warranty service will be provided with the prevailing warranty service type and service level available for the IWS-eligible machine type in the servicing country, and the warranty period observed will be that of the country in which the machine was purchased.

To determine the eligibility of your machine and to view a list of countries where service is available, visit

http://www-304.ibm.com/jct01004c/systems/support/supportsite.wss/warrantyform?brandind=5000008

For more information on IWS, refer to Services Announcement 601-034, dated September 25, 2001.

Licensing

Programs included with this product are licensed under the terms and conditions of the License Agreements that are shipped with the system.

Maintenance services

ServicePac , ServiceSuite , ServiceElect, and ServiceElite

ServicePac®, ServiceSuite™, ServiceElect, and ServiceElite provide hardware warranty service upgrades, maintenance, and selected support services in one agreement.

Warranty service upgrade

During the warranty period, a warranty service upgrade provides an enhanced level of On-site Service for an additional charge. A warranty service upgrade must be purchased during the warranty period and is for a fixed term (duration). It is not refundable or transferable and may not be prorated. If required, IBM will provide the warranty service upgrade enhanced level of On-site Service acquired by the customer. Service levels are response-time objectives and are not guaranteed.

IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts.

CRUs will be provided as part of the machine's standard warranty CRU Service except that you may install a Tier 1 CRU yourself or request IBM installation, at no additional charge, under one of the On-site Service levels specified below.

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose.

See the Pricing section for specific offerings.

Maintenance service

If required, IBM provides repair or exchange service, depending on the type of maintenance service specified below for the machine. IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the

problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. Service levels are response-time objectives and are not guaranteed.

CRU Service

If your problem can be resolved with a CRU (for example, keyboard, mouse, speaker, memory, or hard disk drive), IBM will ship the CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM at any time on your request.

IBM specifies in the materials shipped with a replacement CRU whether a defective CRU must be returned to IBM. When return is required, return instructions and a container are shipped with the replacement CRU, and you may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

On-site Service

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose.

See the Pricing section for specific offerings.

Maintenance service (ICA)

Maintenance services are available for ICA legacy contracts.

Alternative service (warranty service upgrades)

During the warranty period, a warranty service upgrade provides an enhanced level of On-site Service for an additional charge. A warranty service upgrade must be purchased during the warranty period and is for a fixed term (duration). It is not refundable or transferable and may not be prorated. If required, IBM will provide the warranty service upgrade enhanced level of On-site Service acquired by the customer. Service levels are response-time objectives and are not guaranteed.

IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts.

A CRU will be provided as part of the machine's standard warranty CRU Service except that you may install a Tier 1 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service specified below, On-site Service.

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose.

See the Pricing section for specific offerings.

Maintenance service

If required, IBM provides repair or exchange service, depending on the type of maintenance service specified below for the machine. IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. Certain machines contain remote support capabilities for direct problem reporting,

remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines On-site Service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. Service levels are response-time objectives and are not guaranteed.

CRU Service

If your problem can be resolved with a CRU (for example, keyboard, mouse, speaker, memory, or hard disk drive), IBM will ship the CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM at any time on your request.

IBM specifies in the materials shipped with a replacement CRU whether a defective CRU must be returned to IBM. When return is required, return instructions and a container are shipped with the replacement CRU, and you may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

On-site Service

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose.

See the Pricing section for specific offerings.

Non-IBM parts support

Warranty service

IBM is now shipping machines with selected non-IBM parts that contain an IBM field replaceable unit (FRU) part number label. These parts are to be serviced during the IBM machine warranty period. IBM is covering the service on these selected non-IBM parts as an accommodation to its customers, and normal warranty service procedures for the IBM machine apply.

Warranty service upgrades and maintenance services

Under certain conditions, IBM Integrated Technology Services repairs selected non-IBM parts at no additional charge for machines that are covered under warranty service upgrades or maintenance services.

IBM Service provides hardware problem determination on non-IBM parts (for example, adapter cards, PCMCIA cards, disk drives, or memory) installed within IBM machines covered under warranty service upgrades or maintenance services and provides the labor to replace the failing parts at no additional charge.

If IBM has a Technical Service Agreement with the manufacturer of the failing part, or if the failing part is an accommodations part (a part with an IBM FRU label), IBM may also source and replace the failing part at no additional charge. For all other non-IBM parts, customers are responsible for sourcing the parts. Installation labor is provided at no additional charge, if the machine is covered under a warranty service upgrade or a maintenance service.

Warranty service upgrades

IBM hourly service rate classification

One

Field-installable features

Yes

Model conversions

No

Machine installation

Customer setup. Customers are responsible for installation according to the instructions IBM provides with the machine.

Graduated program license charges apply

No

Licensed machine code

IBM Machine Code is licensed for use by a customer on the IBM machine for which it was provided by IBM under the terms and conditions of the IBM License Agreement for Machine Code, to enable the machine to function in accordance with its specifications, and only for the capacity authorized by IBM and acquired by the customer. You can obtain the agreement by contacting your IBM representative or visiting

http://www-1.ibm.com/servers/support/machine_warranties/machine_code.html

IBM may release changes to the Machine Code. IBM plans to make the Machine Code changes available for download from the IBM System x technical support Web site

http://www-304.ibm.com/systems/support/

If the machine does not function as warranted and your problem can be resolved through your application of downloadable Machine Code, you are responsible for downloading and installing these designated Machine Code changes as IBM specifies. If you would prefer, you may request IBM to install downloadable Machine Code changes; however, you may be charged for that service.

Educational allowance

None

Pricing

For current prices, contact IBM at 888-Shop-IBM (746-7426) or visit

http://www-03.ibm.com/systems/x/

Description	Machine type	Model number	Part number
IBM BladeCenter H Chassis	8852	4TU	88524TU

The following are newly announced features on the specified models of the IBM BladeCenter 8852 machine type:

Description	Model number	Feature number	Initial/ MES/ Both support
BladeCenter 2980W Power Supplies 1&2	HC1	2142	Initial
BladeCenter H Base	HC1	5679	Initial

```
System Documentation and Software-US English
                              HC1     9716     Initial
```

The following features are already announced for the 8852 machine type:

```
                                                Initial/
                                                MES/
                              Model   Feature   Both
Description                   number  number    support

BladeCenter 2980W Power Supplies 3&4
                              HC1     2143     Initial
Code GBM
                              HC1     2144     Initial
```

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